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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/388,829	09/01/1999	KENNETH J. KNIGHT	MS1-321US	4486

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EXAMINER	
BURGESS, BARBARA N	
ART UNIT	**PAPER NUMBER**
2157	

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/388,829	KNIGHT ET AL.	
	Examiner	Art Unit	
	Barbara N Burgess	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) *34 and 35* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is in response to the applicant's Request for Continuation Examination (RCE) filed November 19, 2004. Claims 1-33 are presented for further examination. Claims 34-35 are presented for initial examination.

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121.

   I. Claims 1-33, drawn to a method of synchronizing data among a plurality of web servers comprising receiving updated data into staging caches and causing this data to be accessible from an active cache, classified in class 709, subclasses 248.

   II. Claims 34-35, drawn to a method of synchronizing data among a plurality of web servers comprising receiving data from the data server to be stored in the active cache, classified in class 709, subclasses 203.

2. The inventions are distinct, each from one another because of the following reasons: Inventions II and I are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product (MPEP § 806.04(b), 3rd paragraph), and the species are patentably distinct (MPEP § 806.04(h)). Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record

that is the case. In either case, if the examiner finds one of the inventions anticipated by the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. Because these inventions are distinct for the reasons given above and the search required for Invention I is not required for Inventions II, restriction for examination purposes as indicated is proper.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

7. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more

of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(l).

8. A telephone call was made to Applicant's representative, Lewis Lee, on Wednesday, March 16, 2005. An election of Group I was made. Group I is presented for further examination.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-5, 10-12, 14-19, 22, 29, 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd (US Patent No. 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688).

As per claims 1,14-15, 29, 33, Shepherd discloses a method, system, and computer readable memories of synchronization among a plurality of web servers in a network wherein each of the plurality of web servers is coupled to a common data server, the method comprising:

- Receiving updated data into the staging caches in the plurality of web servers (column 2, lines 9-12; column 10, lines 4-6, 10-12);

- Copying data from the staging cache of each web server to an active cache of each web server (column 11, lines 12-15, column 14, lines 24-30).

Shepherd does not explicitly disclose:

- Retrieving a scheduled activation time from the data server.

However, the use and advantages for retrieving data into the staging cache and copying data from the staging cache to an active cache is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 2, lines 7-15, column 9, lines 32-34, 51-53).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate retrieving a scheduled activation time from the data server in Saether's synchronization method in order to specify a time in which the plurality of servers will be synchronized.

As per claims 2 and 16-17, Shepherd does not explicitly disclose:

- Comparing a time associated with a clock in each web server to a time associated with a clock in the data server;
- Adjusting the scheduled activation time on each web server by the time difference between the clock in the web server and the clock in the data server.

However, the use and advantages for comparing the clock in the web servers with that in the data server and adjusting the scheduled activation time is well known to one

skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 9, lines 60-67).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate these steps in Shepherd's method in order for the slave nodes to synchronize its local time with that of the reference time.

As per claims 3 and 18, Sheperd does not explicitly disclose:

- Each web server contains a clock, and wherein the clocks in the plurality of web servers are not synchronize with one another (column 5, lines 27-31,column 9, lines 11-12).

However, the use and advantages for each web server containing a clock is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 3, lines 11-13, column 5, lines 36-39, column 9, lines 10-12).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate each server containing a clock in which the web servers are not synchronized with one another in Shepherd's method in order to reduce network traffic by a slave node being an eavesdropper and synchronizing itself.

As per claims 4, 19, and 31, Shepherd discloses copying data from the staging cache to an active cache (column 14, lines 24-30). Therefore, Sheperd implicitly

discloses copying data comprises swapping an active data cache pointer with a staged data cache pointer.

As per claims 5 and 32, Sheperd discloses:

- No communications are required between the individual web servers to synchronize their data (column 3, lines 7-16).

As per claims 10 and 11, Shepherd discloses copying data from active cache of data server to an active cache of the web server when the web server is added and initialized (column 2, lines 9-12; column 10, lines 4-6, 10-1).

As per claims 12 and 22, Shepherd discloses a plurality of web servers comprising a web farm (column 6, lines 38-50).

3. Claims 6 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd (US Patent No. 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) and in further view of Hagersten et al. (hereinafter "Hagersten", 5,958,019).

As per claims 6 and 30, Shepherd, in view of Strong, does not explicitly disclose retrieving updated data into staging caches of web servers performed asynchronously. However, the use and advantage for performing this operation asynchronously is well known to one skilled in the relevant art at the time the invention was made as evidenced

by the teachings of Hagersten (column 2, lines 47-58, column 3, lines 19-23, column 28, lines 6-14, column 30, line 27).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement asynchronously updating data into the staging cache in Shepherd's method of synchronization in order alleviate the stalling and degradation of a system.

4. Claims 7 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd (US Patent No. 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) in further view of Yamazaki (hereinafter "Yamazaki", 5,923,855).

As per claims 7 and 20, Shepherd, in view of Strong, does not explicitly disclose after the scheduled activation time, updating data caches in the data server. However, the use and advantage updating data caches in the data server after the scheduled activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Yamazaki (column 1, lines 19-24, column 5, lines 48-57).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement updating data caches in the data server after scheduled activation in Shepherd's method of synchronization in order to maintain cache consistency.

5. Claims 8-9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd (US Patent No. 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) and in further view of Sakon.

As per claims 8-9 and 21, Shepherd, in view of Strong, does not explicitly disclose calculating the next scheduled activation time. However, the use and advantage for scheduling the next activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Sakon (column 8, lines 25-40, 54-58).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement calculating the next scheduled activation time in Shepherd's method of synchronization in order for each web server to be aware of the next scheduled time of synchronization.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd (US Patent No. 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) and in further view of Brendel et al. (hereinafter "Brendel", 5,774,660).

As per claim 13, Shepherd, in view of Strong, does not explicitly disclose the plurality of web servers being load balanced using a domain name service (DNS) round-robin technique. However, the use and advantage for scheduling the next activation

time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Brendel (column 3, lines 1-6).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement a DNS round-robin technique in Shepherd's method of synchronization in order to manage server congestion and distribute loads across multiple servers.

7. Claims 23- 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd (US Patent No. 6,405,219) in view of Strong et al. (hereinafter "Strong", 5,689,688) in further view of Yamazaki (hereinafter "Yamazaki", 5,923,855) in further view of Sakon.

Shepherd discloses a method of synchronization among a plurality of web servers in a network wherein each of the plurality of web servers is coupled to a common data server, the method comprising:

- Retrieving updated data into the staging caches in the plurality of web servers (column 2, lines 9-12; column 10, lines 4-6, 10-12);
- Copying data from the staging cache of each web server to an active cache of each web server (column 11, lines 12-15, column 14, lines 24-30).

Shepherd does not explicitly disclose:

- Retrieving a scheduled activation time from the data server.

However, the use and advantages for retrieving data into the staging cache and copying data from the staging cache to an active cache is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Strong (column 2, lines 7-15, column 9, lines 32-34, 51-53).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to incorporate retrieving a scheduled activation time from the data server in Shepherd's synchronization method in order to specify a time in which the plurality of servers will be synchronized.

Shepherd, in view of Strong, does not explicitly disclose after the scheduled activation time, updating data caches in the data server. However, the use and advantage updating data caches in the data server after the scheduled activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Yamazaki (column 1, lines 19-24, column 5, lines 48-57).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement updating data caches in the data server after scheduled activation in Shepherd's method of synchronization in order to maintain cache consistency.

Shepherd, in view of Strong and Yamazaki, does not explicitly disclose calculating the next scheduled activation time. However, the use and advantage for scheduling the next activation time is well known to one skilled in the relevant art at the time the invention was made as evidenced by the teachings of Sakon (column 8, lines 25-40, 54-58).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement calculating the next scheduled activation time in Saether's method of synchronization in order for each web server to be aware of the next scheduled time of synchronization.

time, a staging cache, or an active cache.

Response to Arguments

8. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara N Burgess whose telephone number is (571) 272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (571) 272-4001. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Barbara N Burgess
Examiner
Art Unit 2157

SALEH NAJJAR
PRIMARY EXAMINER